

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2005/004557

A. CLASSIFICATION OF SUBJECT MATTER
Int.Cl⁷ H01L21/68, H02N13/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
Int.Cl⁷ H01L21/68, H02N13/00, B23Q3/15Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
Jitsuyo Shinan Koho 1922-1996 Jitsuyo Shinan Toroku Koho 1996-2005
Kokai Jitsuyo Shinan Koho 1971-2005 Toroku Jitsuyo Shinan Koho 1994-2005

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	JP 6-302678 A (Tokyo Electron Ltd.), 28 October, 1994 (28.10.94), Full text; all drawings (Family: none)	1-3, 13, 20, 21
Y		15-19
A		7, 8
X	JP 2002-124446 A (Ibiden Co., Ltd.), 26 April, 2002 (26.04.02), Full text; all drawings	1-3, 13, 17, 20, 21
Y	& EP 1124404 A1	4, 6, 14, 17-19
A	Full text; all drawings & US 2002/0043530 A1 & US 2003/0015521 A1 & WO 2001/039551 A1	7, 8

 Further documents are listed in the continuation of Box C. See patent family annex.

- * Special categories of cited documents:
- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier application or patent but published on or after the international filing date
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- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed
- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
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Date of the actual completion of the international search
13 June, 2005 (13.06.05)Date of mailing of the international search report
28 June, 2005 (28.06.05)Name and mailing address of the ISA/
Japanese Patent Office

Authorized officer

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	JP 8-203991 A (APPLIED MATERIALS, INC.), 09 August, 1996 (09.08.96), Full text; all drawings	1-3, 5, 13, 15, 16, 20, 21
Y	& EP 0692814 A1	4, 6, 9-12, 14-19
A	Full text; all drawings & US 564814 A1	7, 8
X	JP 2002-26113 A (Toshiba Corp.), 25 January, 2002 (25.01.02), Full text; all drawings	1-3, 5, 13, 20, 21
Y	& US 2002/0006680 A1	6, 9-12, 14, 17-19
A	Full text; all drawings	7, 8
Y	JP 2003-179128 A (NGK Spark Plug Co., Ltd.), 27 June, 2003 (27.06.03), Full text; all drawings (Family: none)	9
Y	JP 2004-31594 A (Kyocera Corp.), 29 January, 2004 (29.01.04), Par. No. [0019]; Fig. 2 (Family: none)	10-12
Y	JP 2003-318251 A (Kyocera Corp.), 07 November, 2003 (07.11.03), Claims; Fig. 2 (Family: none)	18
Y	JP 2004-31599 A (Kyocera Corp.), 29 January, 2004 (29.01.04), Par. No. [0023]; Fig. 2 (Family: none)	18
Y	JP 8-64663 A (Sumitomo Metal Industries, Ltd.), 08 March, 1996 (08.03.96), Full text; all drawings (Family: none)	19
Y	JP 11-251417 A (Kyocera Corp.), 17 September, 1999 (17.09.99), Full text; all drawings (Family: none)	19